Rule 21 Working Group Meeting #37 – Agenda
September 24, 2002

SCE
7951 Redwood Drive
Fontana, CA 92335
Meeting Agenda
9:30 – 4:00

Combined Group Discussion 9:30 am to 10:30 am

Introductions, General Housekeeping, & Next Meeting Location October 24-Sacramento

- Announcement of the FOCUS team effort to develop a Guidebook

Update on FERC ANOPR and Strategy Discussion

- Small generator group likes the Rule 21 approach, and may pursue
- Some posturing between the generators (IPPs) and the distributors of electricity (utilities)
- Group is trying to complete within 5 weeks—a consensus document in which to start negotiation (Advanced Notice of Proposed Rulemaking—is prefatory to a NOPR to follow).
- Originally the ANOPR was set up with <2MW "super-expedited"; 2-20MW is "expedited"; R21 of course has avoided breakpoints such as 2MW limits—issues are more related to size of generator relative to feeder size. ANOPR Group is starting to hear the logic of eliminating the breakpoint.
- Certification vs Pre-Certification: R21 argument is that there is no pre-cert, only certification, because generator certification does not equal generating facility certification. Also there is no ownership of certification in FERC, unlike the certification board in CA; however, FERC is relying on UL; to rely on UL, however utilities will need to feel comfortable with the testing and reporting standards of UL. Utilities say technical review body should approve the certification.
- The group needs greater terminological clarity : generator vs generating facility
- Concern among utilities about interconnection costs being borne by shareholders, that the costs cannot be put into the rate base.
- FERC has had very little input to the meeting—they do not even provide a scribe;
- Some transmission studies take 5-6 months (according to Jerry J.) and the ANOPR discussion there are some proposed tight timelines that might be very difficult to meet on the transmission level.
- How does the process change when the ANOPR becomes a NOPR? The starting document from the ANOPR should eliminate some discussion, timelines are uncertain.
- What is the role of Cal ISO in the ANOPR? Unresolved.

- Goal for R21 participants to have 1 process for all sizes, tailored to the complexity of the project.
- ANOPR group has been generally accepting of the Rule 21; lots of commonality between technical information in different states. Technical consistency will likely carry through to ANOPR & NOPR; jurisdictional implementation issues will more likely vary. CA is represented by PUC representative in the ANOPR States group;
- November 4 deadline for ANOPR.

Technical Group Update

- Working on SCCR
- Two groups to discuss 2 documents each (2 docs per group) to cover all 4 screens
- Time frame for completed documents: final draft to be circulated after September 30-Oct1 Tech group meeting, with one last chance for workgroup input

Jeff Newmiller's Notes:

Update on FERC ANOPR and Strategy Discussion

- Meetings on Thursdays
- Generators want to say "if we are listed to UL1741 then we should be certified" – scott saying that is not enough.
- Many people hanging hats on 1547, but it is not yet ratified.
- Was not clear that there are balance of system components that can be crucial to proper operation that are outside of the UL1741 evaluation. Generator is only a piece of the generating facility.
- Still a couple of weeks away from clarification on these points.
- Primarily for export to wholesale market, or connected to a FERC controlled line, or ??. Large refinery, connected to FERC controlled line, that does not export. FERC felt that generation without export would count as "sale to self" and fall under FERC rules, though they are not tackling this yet.
- Cost responsibility for studies being borne by utility shareholders because there is no mechanism for incorporating such costs into the rate base. Have to put listing of available studies on web, but concern about potential gaming of allocation of costs of studies.
- FERC is taking a hands-off approach to facilitating the meeting… requiring "caucuses" to provide "scribe". They started with ANOPR language this time.
- East coast utilities charging typically 50k for feasibility study for 5MW generation facility.
- They are trying to hash out the technical stuff this week. Hopefully next week they will discuss certification, though they probably aren't going to be interested in the same level of detail as Rule 21.

- Rumor that the US Senate energy bill as of 9/20/02 has a break point of 250kW, impact is not clear.

- Tom Dossey points out that he has yet to see a completed application turned in first time yet, so this is an interactive process. FERC is approaching this as an adversarial process, leaving only one chance for the utility to ask questions.

Non-Technical Breakout (Rest of the Day)

Rule 21, Section F (Telemetry and Telemetering Equipment) Language Work

- Generator wants to own and operate the utility; why? generator has to purchase that component anyway—therefore generator would rather own it; PM ion 7500 meets or exceeds all requirements of the metering. Utility looks for data stream output to populate a MDMA meter and data management for; data posted on a 15-minute data; utility needs to integrate information; must be in a utility-approved
- What utility needs to measure: 1. measure retail meter from utility; 2. GCOG cogen gas rate 3. at generator for non-bypassable charges, departed; 4. self-gen incentive program; 5. distribution operating monitoring (need real-time data >10MW)
- SDG&E requires utility ownership of metering; PG&E has recently begun requiring metering ownership; SCE also has changed to require utility ownership; previous metering has allow RealEnergy
- How would 3 utilities come up with identical metering requirements?
- 3rd party metering entity would need to be MDMA approved (Rule 22)
- Approximately 100 meters in SCE are owned by the customers, and when SCE wants to collect information from these, there is uncertainty how to do that; PG&E has same issue, unknown # sites.
- Distinction between performance-based requirements and hardware specifications
- Would MDMA requirement be a problem for existing generators? CAC unsure; other generators may prefer utility metering in some situations.
- SCE will distribute Net Generation Metering Requirements (ESR SErvice Requirements) to SDGE & PG&E & Bear Valley Electric, & RealEnergy for discussion; draft will be distributed here; THIS ISSUE WILL BE DISCUSSED AT THE NEXT MEETING.
- Group suggestion to leave language alone; that appears to be provisional consensus.
- Options for RealEnergy to comply with metering: 1. let utilities do it; 2. RealEnergy becomes MDMA; 3. RealEnergy hires an MDMA; 4. RealEnergy files a complaint with 25 signatures = "mini-application" (Pat of SCE); (this may have to be filed as a proceeding).
- RealEnergy is considering its options, and whether it will request further changes to Rule 21 SEction F.
- Werner B. has changes to the existing bin list for SEction F... (See Scott's last document distribution on 9-23)
- Section F.3: e:should strike "size" and say "Net Nameplate Rating"
- A lot of discussion about seven subpoints; revenue metering would allow monitoring for DG benefits; CAC/EPUC is reluctant on additional metering.

- In "c" change "type" to "cost".
- Strike "a";
- Strike "d"
- First sentence of 3: "For purposes of monitoring Gen Fac operation to determine standby and applicable..."
- Last sentence of 3: strike "In exercising...Net Generation Metering" . Begin sentence at "[EC] shall consider..."
- Strike "size" and say "Net Nameplate Rating" throughout Section F.
- Section 4: Strike last 2 sentences of Section 4. (CAC/EPUC is checking to see if it's an issue).
- Tom D will recraft F.4 and send it to CCooley.
- F.6 Sunset provision: change date to 2004;

Werner Blumer's Notes for Section F:

Besides the items in the BIN list, the following should be considered for an update:

- The physical location of the metering equipment is immaterial and therefore the terms "Metering" or "PCC Metering " should not be used. This section is concerned with "Revenue metering" and this should also be changed in the Definition Section H. This would then allow for alternate metering schemes, as agreed upon in an Interconnection Agreement.
- Throughout Rule 21, "Size" should be replaced by "Net" or "Gross (Generating) Nameplate rating " or "capacity", where the electrical characteristic is meant. Start with Section F.
- The distinction between "Metering" and "Metering Equipment" should be made, as applicable.
- Since Rule 21 does not allow export and requires non-export measures, the wording in F.4 is contradicting because it mentions "deliveries from the Producer" and "power deliveries to EC". NEM is not covered by this Rule per F.1.

W. Blumer 9/20/02

FERC ANOPR Discussion – Process Issues, Agreemnts, Strategies

- No further discussion.

FOCUS Team DG Monitoring Study Update

Two and ½ systems are in.

- Loma Linda has lost data.
- Fuel cell at Ford is complete.
- ARCO PV system is complete, but there is no DSL yet.

Other possible systems:

- 2 RealEnergy Systems in SD are under review
- AMD in San Jose, Kawasaki Gas Turbine

- LADWP 2 microturbines + fuel cell

PG&E Filing:

- PG&E filed on their Rule 21 Advice Letter September 4; further changes have been made and not yet filed. Within 2 weeks the 2281-E-A will be filed (the EA will include the handwritten markups in the document that Jerry J. handed out).

Net Energy Metering Meeting
November timeframe, possibly after the CADER meeting in San Diego. Possible agenda items (from minutes from 7-31) : 1. Hybrid systems—how are they accounted for under NEM? 2. Expanded Net Metering sizing: how is size determined? 3. Xantrex inverter issue 4. Other?

Technical Breakout (Rest of the Day)

FERC ANOPR Discussion – Technical Strategies Relevant
Status of Tecogen Rule 21 Equipment Certification Request
Continuing Development of Supplemental Review Guidance Document

Tecogen

While Ed does not want to pursue the argument for requiring operational constraints on voltage and frequency excursions, the compromise remains that we request the actual supporting data that supports the contention that the device meets the excursion detection requirements. The problem remains with this approach that not all test facilities use the "measure" approach, relying instead on a waveform generator to impose excursions and pass-fail the EUT. We remain concerned that the calibration of these imposed waveforms must be documented at a minimum, and feel compelled to point out that the measurements Ed wants will not be available if the waveform approach is considered acceptable with calibration data.

ANOPR

Development of Supp Review Guidance Document

Line section: Old definition being between any automatic protective devices. New definition between any two sectionalizing devices (including fuse definition).
What about protective primary fuses in dedicated transformer? If this installation has matched local load, the high side of the transformer could be energized even if there is no alternate (neighbor's) interconnection point. Bill Cook to build some examples of definitions of line sections. (He says keep examining candidate line sections up to the substation, because to go beyond would involve transmission lines, which are FERC responsibility.)

For SCCR calculations, the line section should be limited to the feeder, since other DG are part of the utility contribution.

Q13: Add up all the short circuit contributions of all the generators on the Distribution Circuit. Want to avoid short circuit fault study. Ratio of generator duty to utility duty. For aggregate SCCR, we add the separate SCCRs of the separate generators. Example: substation 5000A sc, G1 has local 3000A utility sc and generation 500A sc, and G2 has 2000A utility sc and 200A generation sc. Aggregate SCCR is 500/3000+200/2000=0.267. This is intentionally conservative, and tends to emphasize the importance of the contributions of the individual generators at their locations.

What happens between the time of initial contact between the generation developer and the utility and the time the developer gets to the supplemental review? What if another project comes in and gets approved, and the aggregate SCCR changes? Sticky question, policy issue.

Q16: For example above, 5700A (at substation). This is an easy calculation compared to a full fault current study. Ed is looking to develop a "diversity factor" that can help mitigate the fact that lumped SCC is too conservative… still thinking about it.

Q17: If you have plenty of fault current in the generator, you might desensitize an upstream protective device. How much fault current do you have on the device? If you desensitize a protective device, what multiple of the minimum trip limit remains? For example, a 600A minimum trip at the sub, a 1500A scd at the load, then the multiple is 2.5. Adding two 200A sc generators will desensitize the sub protective device by 400A, so the multiple will only be 1.83, which (might?) be below a minimum of 2.0. Ed suggests Ir=1/(1+SCCR) where SCCR is the aggregate SCCR from Q13.
For EC Protective Devices: expressed ad multiples of minimum trip for overcurrent devices or percent of reach for impedance devices.
Impedance devices use measurement of voltage and current to estimate the impedance. This is sometimes referred to as distance-based devices, since the impedance is equivalent to distance in the absence of a fault, so the presence of a fault may appear as a reduction in distance.